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ABSTRACT

Successful implementation of a Collaborative Learning (CL) strategy is much like planning for a journey. The more people are talked to and the more background research is done about the journey, the more successful it will be. Teachers who want to start using CL techniques should observe a teacher or teachers who are experienced and proficient in the use of CL techniques. Obtaining training prior to introducing CL into the classroom is mandatory. Preparation for classes using CL is the key to success. In order to help students begin the process of working collaboratively, it is necessary to provide activities that will foster a cooperative environment and encourage students to get to know each other from different perspectives. Keeping a record of what works and why as the teacher develops CL techniques is desirable. As the CL process is begun, teachers can form support groups with other teachers in departmental areas or across curricula. Because CL is relatively new to many institutions, teachers must work with their supervisors to make sure they are aware of the techniques as well as reasons for using them. Contains a series of e-mails written by teachers describing their experiences and sharing ideas about CL, teaching methods, and its uses. (RS)

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THE JOURNEY BEGINS!

GETTING STARTED USING COLLABORATIVE LEARNING TECHNIQUES

By Ted Panitz

ED 448 445

Successful implementation of a CL strategy is much like planning for a journey. The more people you talk to who have been to your destination and the more background research you do, the more successful you will be. As a first step we recommend observing a teacher or teachers who are experienced and proficient in the use of CL techniques: professors who have excellent reputations among students and teachers for their CL teaching techniques. Many people profess to use CL techniques but in reality are not qualified in this area. We recommend several class visits prior to initiating research and reading into CL techniques, in order to experience first hand the sensations and reactions one has when first observing people placed in groups as the primary instruction paradigm (Kidder 1989). In an ideal situation the teacher you observe would also serve as mentor and coach. However, if CL practitioners are not available, then an alternative is to take a course in CL, being careful to make sure that it is truly an interactive class. The activities provide the personal experiences needed to understand how teachers and students react to CL.

Once you have decided that CL is a viable teaching strategy, obtaining training prior to introducing it into your classes is mandatory. We suggest seminars, workshops, and courses which model CL through interactive activities, and demonstrate specific techniques, warm-up activities and group building exercises. Training should extend over time and not consist of a single seminar or intensive multi day workshop (Cooper 1992). Becoming a CL teacher is an exploratory process which requires practice, analyses, feedback and continual modification. The process is evolutionary and will continue to change throughout one's career (Rolheiser-Bennett, & Stehahn 1992). Continuous self evaluation and revision of one's techniques, by attending and presenting at CL seminars and sharing ideas and techniques with colleagues, creates exciting professional development opportunities. Continuously learning new methodologies helps prevent teacher burnout, caused by repeating and using the same lecture and class technique every semester.

It is important at this stage to start building a library of books and articles for reference and to provide a philosophical basis for adopting CL. There are many excellent resources available in the form of edited books (Slavin 1990; Davidson 1990; Sharan 1994), manuals (Johnson, Johnson & Holubec 1984, 1990,1992; Cooper et al 1995; Reynolds et al 1995; Foster 1993) and magazines (Graves & Graves, Editors) published by CL practitioners. Of course, the reading you do will be much more meaningful if it is done in the context of initiating CL.

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The best time to start CL is at the beginning of the semester when students are most receptive to being introduced to new class procedures. It is more difficult, but not

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impossible if this is the only choice, to switch during the semester after students have become adjusted to particular class procedures. Students need to be sold on the idea of CL. In our current system CL is not used by enough teachers to make it familiar to students and thus easily adopted.

Preparation for classes using CL is the key to success. Explaining in detail why you are using CL is mandatory, as well as describing the benefits and results. Providing written materials describing CL, such as journal or newspaper articles, gives students a rationale and philosophical basis for its use. Making clear what process will be used to evaluate students is very important. Possibilities include group grades on projects or tests or individual grades. The criteria for grades must be clear in either case.

When starting CL, using techniques you feel comfortable with and which have the greatest potential for success is very helpful. Having students work in pairs is the easiest to organize has the fewest social problems associated with it, and engages the greatest number of students (Swartz, Black & Strange, 1991). With pairs one person verbalizes while the other listens and responds. This creates an environment where 100% student participation is achievable.

We recommend the use of worksheets, one for each pair, which are handed in at the close of the lesson, and signed by both group members for some form of credit or grade. We suggest using worksheets initially because students and teachers cannot be expected to move from the traditional lecture classroom to CL techniques like Jigsaw and Structured Controversy overnight. Our experiences have shown that students tend to work independently and need a mechanism to focus their attention on the group effort. Asking students to work on textbook questions does not provide enough incentive to get them to work together (though it's certainly acceptable to use textbook questions in developing worksheets). We think of the use of the worksheet in pairs as a bridging mechanism between the old and the new, as a way of easing or transitioning into CL in small steps and measured doses, using materials familiar to both teachers and students, while they acclimate themselves to this new method of learning.

The worksheet in pairs is an excellent method for novice teachers to begin incorporating Cl activities into their classroom. For multiple section classes it might be advisable to try this technique on a single section first in order to evaluate the outcomes and student responses. Try it on your best class. If successful, implementing the technique in all the other sections with a high degree of confidence becomes easier. Changes can be tried prior to effecting a large number of students.

In order to help students begin the process of working collaboratively, it is necessary to provide activities which will foster a cooperative environment and encourage students to get to know each other from different perspectives (Weinstein & Goodman 1980; Williams 1992; Johnson & Johnson 1985, 1990). This can be accomplished through warm-up and ice breaking activities. At the beginning of each semester we use a pairs interview technique in which students discuss their interests including career interests, academic majors, hobbies and extracurricular activities, etc. Two specific questions which we want answered are "What is your biggest concern about the course?" and

"How to you feel about the subject we are studying?" When we teach math classes the second question elicits many responses which reflect the students' math anxieties, and this provides an opportunity to begin to address them during the first class. Students also learn that they are not alone in their concerns.

When we start using larger groups we use an activity called "Finding Things In Common" in which the group must find, appropriately enough, five things they all have in common which are not related to school, work or family, but are of a personal nature such as favorite musician, food, reading material, or a place they have all visited. This activity helps students get to know each other on a personal level and encourages them to discover commonalaties. Another group building activity has each group write on one flip chart size paper fears about the course, the semester or being in school generally, and on a second paper their hopes and aspirations or reasons for attending the course or school. The charts are hung around the room and provide a basis for a class discussion about common fears and hopes. What becomes clear is that their fears are often opposite their hopes. This activity gives students a feeling of being interconnected.

A third activity we use is to ask group members to find something in their pocketbook or wallet which will help others in the the group get to know them better and to explain why this item reflects their nature or personality. This is an enjoyable activity and helps build a sense of social interaction in an academic setting.

An activity recommended by Nell Warren Associates (Warren 1995) asks students to draw a picture of themselves on a sheet of paper, or write a series of words on a paper, or draw pictures of animals or objects with which they identify themselves. Each participant pins the sheet to his/her clothing and then circulates around the room reading other students' sheets, without talking. Every minute the teacher signals the students to move on to someone new, for a total of ten to fifteen meetings. After the nonverbal activity the group members ask questions of the other participants. At the end of the activity the members briefly discuss their feelings and reactions to this technique. This is a likeable activity which in addition to getting students to interact and learn more about themselves, also encourages them to start the process of analyzing group activities and their own reactions to class and group interactions. Other activities include having students make up three statements about themselves, only one of which is true. Then put students into groups and have them guess which statements are true by questioning each other; the questions must be answered honestly. These are just a few of the many activities available to teachers. There are many resources available which describe in detail warm-up and group building activities (Kroehnert 1991; Scearce 1992; Weinstein & Goodman 1980; Williams 1993).

Using groups of three or more takes more preparation and thought in order to engage all the students in the activity. Role assignment may be needed to insure an equal distribution of effort and training in appropriate group behavior will also be necessary to insure active participation by all members. When introducing a topic the teacher will find it helpful to use a short lecture followed by the CL activity. It is very comforting to the teacher and student alike to mix lecturing with group work. As the teacher gets more

experienced and confident with CL it becomes possible to start classes with CL activities and then later use short lectures to highlight concepts or address problems or questions groups have as they arise.

In order to begin using collaborative learning techniques Artzt and Newman (Davis, Maher, Noddings (Eds.) 1990) suggest trying them out with homework assignments initially. Students need to be advised that they will be working together during the next class in order to encourage them to do the homework. At the beginning of the class allow ten minutes for each group to compare their homework results and come to an agreement on the best solutions. Then have the group submit one set of solutions. Finally, the teacher leads a discussion on the difficulties the students have encountered. A particular benefit to this process occurs when students have the opportunity to check their homework within the privacy of the group and work out trivial difficulties without needing to involve the entire class. It is also not necessary to discuss all the homework problems with the whole class, thus saving time for additional group work. The teacher has an opportunity during this period to observe each group interacting and to see which students have done the work and at what level of performance.

Another collaborative technique which we find helpful is to assign groups the responsibility for working out one problem or answering one question out of a set of problems, then placing their answer on the board. The teacher may chose one of the group members to go to the board or the group may chose someone, providing they do not chose the same person every time. Several members may work at the board together if they feel more comfortable that way. More accountability accrues when the teacher chooses the presenter because all group members must be informed and ready to do the work on the board. A variation of this technique is to have each student explain his/her approach in a mini lecture and answer other students' questions. This technique is especially useful in mathematics and science classes and has applications in other technical and non-technical courses as well.

In class, academic games also help build a sense of group cohesion. In Math Olympics, for example, groups of four or five students attempt five problems which are placed on the board. Each group is responsible for answering all the problems. After a set time one member of each group writes their group's answers on a grid on the board. The results are checked for accuracy. The groups are responsible for establishing their own procedures; each member may do one problem or all the problems. They then check with each other to reach an agreement on their solutions. If at any time there appears to be a consensus that the groups are missing a concept, a mini lecture can be given or students may be asked to explain their approaches. While the groups are working, their problem solving activities and interactions may be observed by the professor. At the end of the session a few minutes are allowed to discuss what transpired within their groups and what they can do to improve their working together.

Felder and Brent(1994) recommend the following in-class procedures. Early in a class period, organize the students (or have them organize themselves) into teams of two to four, and randomly assign one student in each group the role of team recorder. Ideally, after no more than 15 minutes of lecturing, give the teams an assignment to do,

instructing the recorder to write down the team responses. You may circulate among the teams verifying that they are on task, everyone is participating and that the recorders are doing their job. Stop the teams after a suitable time and randomly call upon students to present their teams' solutions. Suggested topics include: recalling prior material; stage setting by identifying questions under consideration for the day; asking students to think in advance about questions which can effectively motivate them to watch for the answers during the remainder of the class period; responding to questions such as "What procedure could I use here?" or "What would you guess is the next step?"; problem solving- "Turn to page 27 and answer question 5 together"; analytical, evaluative and creative thinking- "List all the assumptions, problems, errors, ethical dilemmas you can find in this case study, scenario, problem solution"; generating questions and summarizing; Jigsaw- each group member is assigned a different part of a question or problem, then they join with members of other groups who have the same section in order to become experts on their topic, and then return to teach the group what they have learned. These are a few of the many activities which may be used to initiate collaborative learning procedures in classes.

Keeping a record of what works and why as you develop CL techniques is desirable. A teaching journal is very handy for this purpose. Spontaneous changes are sometimes made in techniques based upon student reactions and group results. It is important to make a record of these changes in order to keep track of them and to be able to modify course materials for future use or for sharing with colleagues. It also is helpful to record what doesn't work and the reasons why.

Involvement of students in evaluating the CL activities and in designing them is important, yet few teachers are trained or encouraged to do this. There are several simple techniques which ask students to write about their reactions to the class or describe what they have learned. The One Minute Paper given at the conclusion of the class (Weaver & Cotrell 1985; Cross & Angelo 1993) asks students to describe the most important concept they learned and what question(s) they still have. This helps the teacher determine if the material was indeed understood by the students. We often lecture and presume students understand what we are saying. A variation is the Think-Pair-Share activity, in which students complete the One Minute Paper, share their written comments with a partner, and then with the whole class. Such a technique might be employed at the end of class or at the beginning of the next class to help students verbalize their understanding of particular concepts.

Other noteworthy ideas: asking groups to identify three things they did well and one thing that needs improvement helps focus attention on the groups' social skills. A classroom meeting model can be used to discuss any issue facing a class. To do this sit the students in a circle where they can see each other, and discuss some aspect of the class procedure or content. The teacher may moderate the discussion, or for a more collaborative approach, a ping-pong procedure can be used in which the student speaking recognizes the next speaker and so on. Students can be asked to write about problems they see occurring in class or in their groups, as an individual assignment or part of their regular writing journal.

CL is based upon a philosophy of working together. It is necessary for teachers to model this approach by seeking student opinions and suggestions for improvements in the course. In turn students are encouraged to assume an ownership of the class, and very high expectations are set by involving the students with the teacher in designing classes. The class is personalized by the active involvement of the student and teacher in a deliberative process. This is not possible when the lecture method is the only class procedure employed.

When CL is introduced into a class students need to be trained in group dynamics theory, social skills and conflict resolution. Teachers need to be trained in these areas as well through attendance at workshops, seminars, courses and in-service activities and mechanisms must be established to determine if groups are functioning properly. To begin, there are several mechanisms available to accomplish the student training. The use of a T-chart specifies what a particular desired activity or behavior should look like and sound like to an outside observer. If equal participation is desired, then the teacher needs to facilitate a class discussion about what student behaviors would be observed during a CL activity, to insure that this social skill was being accomplished. A collaborative activity might be used prior to the class discussion by involving groups of 2-4 students in identifying and discussing the characteristics first, possibly prioritizing them, and then reporting back to the class as a whole. These characteristics are then placed upon a chart and displayed in a prominent place. For a specified period of time a particular skill is worked on by the class. At the end of each class or activity some time needs to be allotted to review how the groups performed the social skill under study and what might be done to improve their actions and behaviors to facilitate the desired behavior. Another technique is to have group members evaluate each other's performance during an activity as to the amount and quality of the contributions made by each member. Asking students to write about what worked and what didn't is a good way to determine if desired outcomes are being achieved.

Another important mechanism the teacher has to provide feedback to groups comes from the observation of their performance on assignments during class. The teacher generally spends time during each class walking among groups, observing their activities and behaviors, answering questions and socializing with students. This provides teachers with an excellent opportunity to listen to students explain concepts and interact with each other. The teacher may then comment on these observations at the end of class. There are also more formal mechanisms to observe groups, which include activities like tallying how many times each student participates or determining the quality of participation in terms of how many times he/she uses a particular social skill.

Once teachers become comfortable with using groups they may wish to expand their repertoire of activities. Slavin (1990) provides a complete description of more advanced CL techniques. For the purposes of this paper these techniques will be listed only by name with associated references. Co-op, Co-op (Kagan 1989); CIRC- Cooperative Integrated Reading and Comparison (Madden, Slavin, Stevens 1986); Group Investigation (Sharan & Sharan 1976); Issues Controversy (Johnson & Johnson 1987); Jigsaw (Aronson et al 1978); Jigsaw II (Slavin 1983); Learning Together (Johnson & Johnson 1987); TAI-Team Assisted Individualization (Slavin, Leavey & Madden 1986);

TGT-Teams-Games-Tournament 1978); STAD- Student Teams Achievement Divisions (Kagan1978): Structures (Kagan 1989).

As the CL process is begun forming support groups with other teachers in departmental areas or across curricula is desirable. Having a resource group to share ideas and techniques and to discuss new approaches is important. The Johnsons refer to base groups and formalize the process by having them meet regularly to report on specific activities that members have tried. They recommend that teachers sign contracts with the base group to help provide additional motivation for new users of CL techniques. The formation of support groups is necessary because few teachers use CL; therefore it is difficult to receive feedback or advice from experienced teachers.

Because CL is relatively new to many institutions, teachers must work with their supervisors to make sure they are aware of the techniques as well as reasons for using them. Supervisors who are used to seeing orderly, quiet classes with students listening to a lecture need to be informed about the nature of CL classes, where students talk in groups and socialize while they work on task. A common concern among CL teachers is that their supervisors will not understand what is taking place in the class and that poor evaluations will result. This problem can be avoided by the institution's providing training for administrators, and by the teachers working closely with their department heads and other supervisory personnel.

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Date: Mon, 13 Nov 1995 15:39:00 -0500

From: Louis Schmier <lschmier@GRITS.VALDOSTA.PEACHNET.EDU>

Subject: Re: A Random Thought: Silence and the Classroom

Sender: Teaching in the Community Colleges <TCC-L@UHCCVM.ITS.Hawaii.Edu>

Jon:

I remember what it was like to be a student in the good ole days.

With few exceptions my classes revolved around the activity and authority

of one person--the prof. I listened to him, I read what he chose to

assign. My task was to memorize so I could repeat them on exams. The

highest level of personal involvement available to me in most classrooms

was to ask a question about the lectures or the readings. Too much

listening was unengaged; too much lecutirng was authoritarian; too much

learning was mechanical memorization, too much passivity was emphasized. We were lined up, counted, organized and owned. The chairs were arranged facing the lectern, row upon row, the learning space was confined to a narrow alley of attention between me and the teacher. Such an arrangement said that in this space there is no room for students to relate to each other and to each other's thoughts; there is no invitation to be a member of a supportive community; there is no hospitality; everyone is isolated; everyone is a stranger. We weren't connected or invited into a community of engaging with one another. We weren't invited to step inside the material.

In their defense, students cling to the conventional pedagogy because they know little else, they've been trained to do little else, and because it gives them security; it keeps them in a world to which they have become accustomed. When I share the power, give students more responsibility for their own learning, they, too, get cynical and scared. They, too, initially complain that I'm not earning his pay or they just want the facts. When they are invited into a more creative active role, they, too, initally prefer to run. They prefer the line of least resistance and have their learning boxed and tied and presented. Students are threatened by an open invitation to learn for themselves and to help each other learn; they would much rather have their learning packaged and sold by the professor. They are threatend by newness and strangeness, of having to expose their ignorance, by having to relate to their peers in ways they would not

outside the classroom, by the possibility of failure that would mar their image, self-esteem, career. These fears are not deeply hidden; they are at the surface.

We who are struggling to break that mold must understand that of learning is unlearning old habit and attitudes. We must make the first move and keep on making the moves simply because we have the authority and power to do so.

Louis Schmier (912-333-5947) lschmier@grits.valdosta.peachnet.edu

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Date: Sat, 17 Feb 1996 14:22:32 -0500 (EST)

From: Alice Macpherson <alicemac@Kwantlen.BC.CA>

To: aednet <aednet@pulsar.acast.nova.edu>

Subject: Cooperative Learning

On Fri, 16 Feb 1996 CCSeefer@aol.com wrote:

> Our school recently went the route of groups/teams in the classroom. All
> teachers were given three days of training in the basics of cooperative
> learning, and group projects and assignments were built into all the
> curriculum. We were encouraged to use it in all of our classes and will be
> evaluated on our ability and willingness to do so. Now that we are three
> weeks into the quarter, the students are saying, "Enough!" They attend class
> five days a week, five periods a day, and it seems that every teacher is
> using group techniques. The students are literally "grouped out." I
> envision all of them seeking employment upon graduation where they can work
> in a cubicle all alone! How would you handle this? Sure, we could cut back,

> but the administration is expecting us to do this and salary increases will

> be dependent upon it. Help!

As a leader of cooperative learning (J&J model) for the past three years and a users for several years before that, I would like to say that I truly believe that unless I actively build in and monitor the "5 elements"

1) Positive Interdependence

2) Individual Accountibility

3) Group Processing

4) Social Skills

5) Face to Face Promotive Interaction

then I find the group thing is just another gimmick. (Spencer Kagan states them a bit differently and in different numbers, but basically its the same and I think that he is right as well)

The structure (group formation) used is the smallest item in the instructional equation and must match the content well. And you must be prepared to adapt and change at any time. Only then does the whole ACTIVITY have a chance.

<all pigs fed, watered, and ready to fly>

It is easy to leave parts out and then conclude that the model doesn't

work. Some people even think that there is less work to teaching in the

cooperative model - actually there is more prep and attention required.

Richard Tiberius has a wonderful book on small group troubleshooting that

may also give good insights.

When we lead a level one cooperative group (3-4 days) we encourage

instructors to get into the water slowly and build on their successes.

Aversion therapy has little place in a learning environment. Can you

negotiate a build up over a semester or two?

I encourage you to start a support (not gripe) group and help each other problem solve using the structures you are trying to implement. The more you practise them the more comfortable that they become.

One suggestion, whenever possible, coordinate with instructors in similar areas so that some groups can remain intact as they travel from class to class. The expectation of working together on projects should be a possible goal instead of the impossibility of trying to meet with five different groups between class sessions.

* Alice Macpherson, Instructor email: alicemac@kwantlen.bc.ca *

* Kwantlen University College phone: 599-3352 vm 9954

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Teachers I work with vary considerably in their initial receptivity to new approaches, especially ones that involve group work. But how they see new approaches and whether they are likely to try them after development workshops depends largely on how they experience the strategy during the presentation. I have been most successful in workshops in which the participants go through the same process their students would experience (but at an adult level), AND have time to reflect on it with others.

I particularly like an article (about science education) that examines some research on conceptual change. The authors demonstrate four conditions necessary for people to change at a conceptual level:

1) They must be DISSATISFIED with their current concept.

2) The new concept must be INTELLIGIBLE--they can understand it,

3) PLAUSIBLE--the new concept seems a reasonable substitute for the old one,

and

4) FRUITFUL--they will get something they want by adopting the new concept and abandoning the old one.

According to these researchers, a conceptual change occurs ONLY when ALL four conditions are present. Otherwise, no matter how skillful or dramatic the presentation, the old concept remains firmly lodged in the mind and soon undermines any fragile connections the new concept might have made.

Most staff development programs have no problem with presenting plausible approaches in an intelligible way. But unless the teachers come in feeling unsatisfied with their practice (or unless I can provoke that feeling in them), they can't internalize the new stuff. And let us say they are dissatisfied with their current practice, and that my concept is both understandable and plausible, if they don't see how the new concept will benefit them--in their terms--the new stuff won't do more than interest them, briefly, before being forgotten.

One way I address the dissatisfied/fruitfulness issues is to spend the time it takes for teachers actually to work through the processes themselves. In fact, if I were doing a workshop on your approach, the participants would actually write their math autobiography, work on problems in pairs, then 3s and 4s, etc.., with time in between for reflection and discussion about classroom implications--just the way you describe your students doing.. A good friend of mine will be teaching a class at UCLA in school technology for K-12 teachers; she plans to use your autobiography and small group strategy to

introduce the group to another high-anxiety subject. She's really excited about your ideas.

California has for a long time focused on cooperative learning and more experiential approaches to instruction in all subject areas. And many schools here are moving toward block schedules which create perfect opportunities for teachers to try new approaches. But many teachers and administrators remain resistant because key factors for change are missing. Some teachers resent being asked to change how they do what they do. They feel that itUs the kids who should change so that what their teachers do works, as it used to work in Tthe good old days.U RCoddling,S itUs called by teachers who Rmaintain standards.S I know the feeling because I have felt it myself: RWho are YOU to tell me that I should do THIS when I'm already good at doing THAT?S When I realized that I wasnUt so good at THAT (or that THAT wasnUt such a good thing to do), I began searching for better ways to teach. I became the perfect candidate for conceptual change, and have spent a wonderful 20 years engaged in that search. My current goal is to find effective ways to set other teachers on the same path. We'll see.

Jenee Gossard Socratic SeminarsQLA 12250 La Maida Street, Valley Village, CA 91607 Voice: 818-761-9932 Fax: 818-761-4864

E-mail: jgossar@cello.gina.calstate.edu

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Date: Fri, 03 Nov 1995 18:35:06 -0500

From: Louis Schmier <lschmier@GRITS.VALDOSTA.PEACHNET.EDU>

Subject: Re: Collab. learning and evaluations

In-reply-to: <v01530505acc004420aad@(132.205.18.244)>

Sender: "Forum for Teaching & Learning in Higher Educ." <STLHE-L@unb.ca>

Penelope:

I don't know of any particular studies that answer your question. But, from my personal experience, my student evaluations soared, drop-out rates plummeted almost immediately. But, you have to realize that students cling to the conventional pedagogy because it, too, gives them security. When a prof tries to share the power, to give students more responsibility for their own learning, they get cynical and scared. They complain that the prof is not earning his pay. When they are invited into a more creative active role, they prefer to run. They prefer the line of least resistance and have their learning boxed and tied and presented. So, students are, and permit themselves to be, lined up, counted, organized and owned. And, professors gladly do it. Students are threatened by an open invitation to learn for themselves and to help each other learn; they would much rather have their learning packaged and sold by the prof. They are threatend by newness and strangeness, of having to expose their ignorance, by having to relate to their peers in ways they would not outside the classroom, by the possibility of failure that would mar their image, self-esteem, career. These fears are not deeply hidden; they are at the surface.

Louis Schmier (912-333-5947)

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Date: Fri, 03 Nov 1995 21:24:22 -0400

From: Karen McComas <mccomas@MARSHALL.EDU>

Subject: Re: Collab. learning and evaluations

Sender: "Forum for Teaching & Learning in Higher Educ." <STLHE-L@unb.ca>

My personal experience with student evaluations has been interesting. First of all, our department has always had every class complete the same evaluation form and then provide the students with the opportunity to write comments. In the past, getting any written comments was rare. The quantitative portion of my evaluations has always been strong. This didn't change. What did change was that almost 100% of the students provided written feedback which has been invaluable in aiding me in making modifications where and when necessary. The majority of the students made comments relating to the fact that they didn't always understand how the course activities were going to assist them with learning the course material, it was only near the end of the semester that they realized how *much* they had learned. In addition, the majority express their delight in having the opportunity to discover that they can think. Finally, when students provide constructive criticism in these written comments, they almost always suggest a solution...and some of these have been very successful in subsequent offerings of the course. If you are feeling uncomfortable, and uncertain, hang in there. You might even share this with your students because they think that they are the only ones that feel uncomfortable and uncertain. I can assure you that you will not regret your new teaching style...the only thing that

you might regret is having waited so long to change.

Karen L. McComas

Communication Disorders, Marshall University

Huntington, WV 25755-2634

URL: http://www.marshall.edu/~mccomas/index.html

More info? finger mccomas@marshall.edu

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Date: Sun, 05 Nov 1995 13:01:25 -0600 (CST)

From: EHART@vax1.miu.edu

Subject: RE: CL and teacher evaluations

Cc: nctm-l@forum.swarthmore.edu

The best advice I have about CL, based on my own use and working with a lot of teachers who use it, is *perseverance*. Unless you have students who are used to it, it seems to take time to get through the initial culture shock. But the rewards are worth it. Also, it helps to be using a curriculum that explicitly supports CL. It also seems that CL goes along with a changing view of what is important in a math class--hard to use CL when doing 50 solve, factor, and simplify problems!

Eric

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Date: Sun, 05 Nov 1995 15:40:59 -0500 (EST)

From: Carlton Severance <cqs8081@is.nyu.edu>

Subject: RE: CL and teacher evaluations

Cc: nctm-l@forum.swarthmore.edu

In my experience, collaborative learning is like any other technique--more applicable to some situations and groups of students than to others. If the class contains one or more (preferably more) natural leaders, cohesive groups quickly form and get on task. Vibrant discussions take place in which all or nearly all students participate,

challenging or defending their points of view, changing them if necessary, and all ultimately arriving at consensus and understanding. My role in these (wonderful) situations has been to prod a little here and there, but mostly just to watch the fireworks and marvel. Students in such a group will perceive and report it as a positive learning experience. If we had a breathtaking learning experience in class, I

bestow the reward of a lightened homework assignment--that gets you high

marks for "fairness".

Students primarily motivated by getting "A's" will not be intrigued with helping their classmates to understand (they're in competition, remember?), and will perceive and report CL classroom experiences as a waste of time, a "disorganized" class, etc. They try to dominate rather than collaborate, and will blame the teacher for any new situation which threatens their dominance.

Students not motivated at all (as in chronic potheads, know-nothings, etc) don't want to collaborate in learning any more than they want to collaborate in anything else, and will generally be happier being told what to do and just not doing it. Since my bias is toward a CL environment (I'm blessed with very small classes in a private secondary

school), I've had some really frustrating experiences trying to apply the CL technique to a group in which it is clearly not appropriate. And yes, they will complain about it.

The idea of "selling" any new technique is a good one, so long as you realize that (a) not everyone will be "sold"; and (b) the technique will not apply equally well to all students.

In classes I've taught where I've received student evaluations, mostly at the college level, I've generally gotten good ratings, with the bad ones approximately equivalent to the bad grades I gave out. Learning to ignore the bottom 10% of ratings is a lesson that took a while. I had one prof who steadfastly refused to read student evaluations from anyone who made less than a "C" in his class (he had us sign them). His attitude was "Who cares what an F student has to say about my teaching?" A valid, if harshly stated point.

My experience tells me--use the CL technique whenever you can, if the group can gel with it. Tell the students what you're doing and why you're doing it, and how they're going to be evaluated on it. Be humane and compassionate and the student evals will (except for 10%) take care of themselves.

Carl Severance, NYU cqs8081@is.nyu.edu

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Date: Sun, 05 Nov 1995 19:17:28 +0300

From: waggoner@storm.simpson.edu (Murphy Waggoner)

Subject: RE: CL and teacher evaluations

To: nctm-l@forum.swarthmore.edu

Another faculty member (in physics) made an observation the other day that I thought was interesting. He had tried a CL activity in his classes one day (he doesn't use CL yet and he is trying to break himself in slowly). In one of the classes (the calculus based physics) the students had trouble getting started. Even though the instructor felt he clearly stated what the activity was, the students stalled and balked. In his other class (the algebra based physics) the students immediately broke into groups and began talking about the activity. The instructor then realized the majority of his algebra based physics class had taken one of my classes in the past and so they were used to this sort of activity. On the other hand, few, if any, of the calculus based physics students had taken a class from me in the past.

The moral of the story is that those of us who are integrating CL into the classroom are making it easier for others in other disciplines to do the same thing.

+ + + + + + + + + + +

Date: Sun, 05 Nov 1995 19:17:30 +0300

From: waggoner@storm.simpson.edu (Murphy Waggoner)

Carlton Severance writes:

>Students primarily motivated by getting "A's" will not be intrigued with
>helping their classmates to understand (they're in competition,
>remember?), and will perceive and report CL classroom experiences as a
>waste of time, a "disorganized" class, etc. They try to dominate rather
>than collaborate, and will blame the teacher for any new situation which
>threatens their dominance.

>

These students are only in competition if the instructor leads them to believe they are. If the students do not think they are in competition, then most students are willing to assist most other students. I often specifically pair up students so there are varying abilities in the group and it works fine. When the students are grouped by like ability, the more capable students like the ability to zoom through the material at their own speed without wasting time.

>In classes I've taught where I've received student evaluations, mostly at
>the college level, I've generally gotten good ratings, with the bad ones
>approximately equivalent to the bad grades I gave out. ....His
>attitude was "Who cares what an F student has to say about my teaching?"
>A valid, if harshly stated point.

Students understand when an instructor in interested in their progress and it is possible to receive good evaluations from poor students when those students perceive the instructor as genuinely concerned. By ignoring the

bottom 10% of the evaluations one is be ignoring the needs of those students who need the most help. The students who are high preformers are often those who would preform well with any method of presentation. I believe that _if_ one were to ignore any evaluations, it should be the evaluations from the best students not the worst.

Murphy Waggoner Department of Mathematics Simpson College
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waggoner@storm.simpson.edu

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To: in%"nctm-l@forum.swarthmore.edu" REPLY TO MURPHY WAGGONER
Subj: Re:Re: CL and teacher evaluations
From: Ted Panitz tpanitz@mecn.mass.edu

Murphy Waggoner has an interesting anecdote about starting CL by announcing it to the class and expecting action as follows.

<<<Another faculty member (in physics) made an observation the other day that I thought was interesting. He had tried a CL activity in his classes one day (he doesn't use CL yet and he is trying to break himself in slowly). In one of the classes (the calculus based physics) the students had trouble getting started. Even though the instructor felt he clearly stated what the activity was, the students stalled and balked. >>>>> (snipped here-see above)

This approach would certainly be a prescription for disaster. Unless as Murphy described the students had some prior experience it is unlikely they would know what to do and how to begin. In starting CL it is very important to help students break the ice and get to know each other before starting content

material. There are a variety of exercizes, many previously discussed on this list, which help students learn each others names and get to know more about the personal nature of their classmates. Consider if students do not know each others names how will they communicate. In each of my classes I start off the first class using the interview process using pairs. I ask one or two questions such as how do they feel about math and what is their biggest concern. In developmental algebra classes you can imagine their responses. After hearing most of their peers have the same feelings of anxiety they relax and are much more inclined to start learning about CL. I have them work inpairs for the first week or so and then do some exercizes to get them confortable working in 3's and 4's. After this "training" period I have little trouble getting them to work together. They virtually demand it if I start lecturing too much. By the middle to end of the semester all I need to say is lets try this material together and they put it on automatic pilot. The energy level that occurs is amazing

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Date: Mon, 06 Nov 1995 10:47:57 +0800 (MYT)

From: "George M. Jacobs" <gmjacobs@technet.sg>

Subject: Re: Is CL "a parade that has past"

Sender: cl@jaring.my

One of the reasons I started this thread is that I really feel we need to emphasize to fellow educators that cooperative learning isn't easy.

David and Roger Johnson in an article in the 1994 volume of Cooperative

Learning magazine list 5 fallacies related to teacher education on cooperative learning. One of these is giving people the impression that CL is simple to learn and utilize. Instead, the Johnsons warn, effective use of CL is a complex skill which takes several years to master. Oversimplifying it may be popular in the short-term, but in the long-term it presents a false picture, which may lead teachers to become discouraged and to give up on CL.

I know for myself, it's an extra step to teach using CL, especially if I want to include a collaborative skill focus and processing of group interaction. Sometimes, I don't include these.

George M Jacobs SEAMEO Regional Language Centre 30 Orange Grove Road Singapore 258352

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Date: 6 Nov 1995 12:22:16 800+

From: Florence Maltby <FMALTBY@Edubase.ed.ac.cowan.edu.au>

Multiple recipients of list L-ACLRNG <L-ACLRNG@PSUVM.PSU.EDU>

Subject: Re: CL and teacher evaluations

As a team in a first year education course we have used collaborative learning in both semesters and in a variety of ways. We have found that the students have benefitted enormously and have given extremely positive evaluations. I believe the'trick' is to provide/create an element of pressure in the form of presenting to the rest of the class at the end of a period of working. This ensures that the students put in considerable effort - as they do not wish to make fools of themselves, and also more importantly

they are able to benefit from the ideas and learning of the other groups. They enjoy working together and learn a great deal from their fellow group members and also the presentations from the other groups. We have found that the effort put in far exceeds what they would do on their own - for example visits/phone calls to places in the community to obtain information, group meetings to plan, develop etc.

I have also used similar ideas in all my 4th year B.Ed. classes where many of the students are experienced and mature classroom teachers. The topics are of course very different, but the principles are the same. The classes last 3 hours, and I have rarely seen signs of boredom. They really enjoy learning from each other, and I benefit also.

It's definitely the way to go - students evaluations are bound to be positive when students are active, and feel that they are learning. Who can possibly enjoy sitting for 3 hours listening to a lecture?! Who can stay awake?!

Dr. Florence Maltby, Edith Cowan University, Pearson Street, Churchlands, WA 6018, Australia Phone: 619 273 8266 Fax:619 387 7095 .E-Mail: F.Maltby@cowan.edu.au

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Date: Mon, 06 Nov 1995 09:15:47 -0500 (EST)

From: sharon hamilton <SHAMILTO@INDYCMS.IUPUI.EDU>

Subject: Re: Collab. learning and evaluations (fwd)

"News on teaching with collaborative learning at Indiana University, Indiana."

<CL_NEWS@IUBVM.UCS.INDIANA.EDU>

Penelope, I have heard from many faculty that their evaluations go down when they try collaborative learning, particularly if it does not go well, but possibly more often when the culture of that course has not typcially been a collaborative learning culture. When I have gone into the classrooms of some faculty who have their students work collaboratively, I have made a general observation that the greater the frequency and amount of time, coupled with the nature of the assignment and the grading process, supporting collaborative learning, the more effective the learning and the better the evaluations. However, this is such observer-based anecdotal information, not based on empirical research. Cheers, Sharon Hamilton, Director of Campus Writing, IUPUI

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Date: Mon, 06 Nov 1995 11:42:52 -0500 (EST)

From: Geza Kardos <gkardos@CCS.CARLETON.CA>

Subject: Re: Collab. learning and evaluations

Sender: "Forum for Teaching & Learning in Higher Educ." <STLHE-L@unb.ca>

To add some insight to this question. Teaching scores are bound to go down when a non-conventional learning environment is used. Not because the students don't appreciate it, but because the usual questionaire is based on the lecture method. In addition it asks the students about how the teacher did this or that, not about what the student learned. the only way to get high scores on teaching evaluations is to ask questions that are relevent to the teaching and learning that is supposed to take place.

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Date: Wed, 01 Nov 1995 10:02:40 -0500

From: Wendy Duncan-Hewitt <wendy@CORTEX.AMA.TTUHSC.EDU>

Subject: Re: Student responsibility thru active learning

Sender: Active and Collaborative Learning <L-ACLRNG@PSUVM.PSU.EDU>

:

I feel that there are some things that get in the way of active learning right from the start, and that its useful to address these issues directly.

These include:

(1) poor critical reading skills;

(2) inconsistent application of largely *unconscious* thinking skills;

(3) a history of trying to discern what the teacher wants to hear (knowing that this, after all, is what gets the grade -- and there IS no room for learning from mistakes because every mistake counts against you);

(4) almost non-existent self-assessment skills.

Look at it this way -- if I'm unsure about whether I read what I THOUGHT I read, know that I often fail at making a logical argument, and don't KNOW whether my work is correct, complete, beautiful, clear, etc. -- I will be highly motivated to let others take responsibility for my learning.

Therefore, it's important to do the following:

(1) work with learners to help them bring their cognitive (and other) processes to consciousness -- for example using the Whimbey pair method;

(2) create a safe environment to make mistakes -- once. These are learning mistakes.

(3) help learners to build an assessment process -- defining goals and constraints, criteria, and a measurement process.

(4) provide as much freedom as possible to pursue personal interests -- even in "core" curricula (this follows the theory presented in the Quality School by W. Glasser). I do this by stating all the exit competencies explicitly then dividing the content into separate problems that are addressed by groups in a problem-based learning format. The groups prioritize the problems, so that they get ones that they are most

interested in. If there is something that is left out, I might take that section on myself (and become a co-learner). They follow a research/problem-solving format and are largely self-directed, although they submit things at various stages for feedback

(in the form of strengths/areas for improvement/insights). The students then write papers and present them to their classmates in a mini-symposium. This is the half-way point in the course. The next stage is something like a journal club. Each of the papers is discussed critically in class after a week's preparation time. (They really

enjoy criticizing my paper if I get a chance to give one). The learners get two individual examinations. The first is formative, the second -- in exactly the same format at the first -- is summative.

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Date: Mon, 06 Nov 1995 17:26:17 -0500

From: Donald R Woods <woodsdr@MCMAIL.CIS.MCMASTER.CA>

Subject: Re: Collab. learning and evaluations

Sender: "Forum for Teaching & Learning in Higher Educ." <STLHE-L@unb.ca>

I have found that if we make any change, student evaluations will usually

decrease. The change could be in the method of assessment, in the use of

cooperative learning, in the use of problem-based learning. Ted Panitz gives extremely good advice. I'll restate his key suggestions (which I have used effectively) and add a few other suggestions.

1. describe, rationalize and illustrate what the change is and why. I too quote the seven principles given by Chickering and Gamson published both in the Wingspread Journal and in AAHE Bulletin (1987) March. The students then at least understand that you are doing the change to improve their learning.

2. many of the changes, such as moving to cooperative learning, require that the students use group skills, problem solving skills, self-assessment skills. Legitimize the use and development of these skills by making them part of the course objectives, assessment and marks. Explain why employers value these skills. Invite alumni to return and explain the important of the skill development parts of the cooperative

learning course. "This course is 80% about biochemistry and 20% about process skill development. Incidently, the process skills will also help you to learn the biochemistry."

3. Have a workshop on "coping with change". Indeed, they will need to learn this skill anyway so why not get a 2:1 benefit; the workshop helps them address positively the anger that they will feel toward youas the change agent, and they are learning real life coping skills that are needed to cope with such experiences as bereavement, job change , job loss. I use the bereavement model combined with Marilyn Taylor's model

for coping with change. This is explained in Chapter 1, "Are you ready for Change?" of "Problem-based Learning: how to gain the most from PBL", available from McMaster University Bookstore (1994). A forthcoming book called "Problem-based Learning: resources to gain the most from PBL" gives example workshop materials you can use for a 1 1/2 h workshop on "coping with change."

4. monitor the change by getting frequent feedback from the students. I use ombudspeople who report to me periodically throughout the course about the strengths and weaknesses of the classroom atmosphere and activities. Another option is to use the 1 minute paper and ask the students to write out what they learned from today's session and what they are confused about.

When I used these components, then when I changed in one course to use the Osterman Feedback lecture with cooperative/active learning sandwiched between two mini-lectures, the student's marks on the final exams improved over what typically happened (I infer that the learning improved) and my course evaluations increased on scale 0 to 5: 3.5, 2.86, change, 4.5, 3.9, 3.4, 4.0, 3.5, 4.0, 4.1. Here, the initial

change gave a very high response; later the 3.4 and 3.5 were dips to ratings similar to before. However, in general the response is more positive.

Hope this helps.

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Penelope Doob asks about evaluations dropping when one starts using CL.

Penelope Reed Doob, Academic Director, CST TEL: (Office) (416) 736-5754 (Home) 465-8845 pdoob@yorkvm2 FAX: (Office) 416-736-5704 (Home) 416-465-2695

<<<I'm interested in learning whether there are any good studies casting light on

the not infrequent anecdotal report that teaching evaluations by students may

drop somewhat when collaborative learning techniques and various kinds of

group work are employed/ required in situations where students have little, or

no, or bad prior experience working in such a way.>>>

<<Does this happen often enough to constitute a problem? Do the effects tend to wash out by the end of a course? if there's a problem, has anyone devised appropriate means of controlling for it (e.g., comparing students who've used collaborative learning before vs. those who haven't in any analysis and interpretation)? could one reassure a young faculty member who wants to try to use collaborative learning strategies that student evaluations might appear to drop for a while but would then likely rise, assuming that the course is indeed well designed and that the strategies employed are in fact contributing to effective student learning? Thanks for any insights you can provide.>>>>

I found this to be the case in the first semester I started using group learning extensively. I had previously used interactive lectures, discussions and asking students to work problems on the board in math classes. I started using groups and insisting more that the groups try to resolve their questions prior to my explaining a solution methodology. They did not always understand my good intentions and interest in helping them learn to think critically about a difficult subject. They wanted me to simply tell them how to do it. I know that doesn't work. They would tell me after a lecture that everything made sense until they went home and found they couldn't do the work on their own.I stuck to my procedures and they began to learn how to study math and they enjoyed working with others and talking and even arguing about how to solve math problems (something they had never done before). However they still felt I was not teaching the way I should i.e. giving them information. In the next semester I started a virtual campaign to inform them abouit CL and its benefits and why I use certain procedures such as warmup exercizes and group building activities etc. I also did a lot of cheerleading about the process and heralded every success and student break through caused by CL techniques. This worked wonders. My evaluations skyrocketed from good ones (4.3-4.5 out of 5 to 4.8 to 4.9's).

My suggestion to anyone starting to use or expanding their use of CL is to make a extroadinary effort to explain what and why you are doing what you do and the outcome you expect and then trumpet the positive effects as they occur. This is a new approach for most students and changer brings discomfort. You can allay their fears by communicating with them virtaully every day. I give them articles from journals and magazines and from newspapers, I use the seven principles of good teaching from the Wingspread Journel and ask them to analyse it and suggest ways we can use the principles in algebra classes. That helps them to focus on the concepts of CL and begin

to appreciate the reasoning behind it. They appreciate my attempts to communicate with them. Finally I listen to their suggestions about how to run the class which is a very important advantage of CL over the lecture method. It also helps to be confident in your use of CL and not be disuaded from using it as some students will try to do.

The result of this effort is that I get excellent student results. They actually start enjoying algebra and tell me that my classes are their favorite ones because they are so active in class. This has created a very strong reputation on campus for my courses and now students expect that they will have a great course, so I need to explain myself a little less defensively than I used to. I still make a major effort to share my interests in CL with them all the time. Something else that occurs to me is that when I return from a conference with a new idea or technique I explain where I got it and how I wouldlike to use it and that I am just as much a student when it comes to CL as

they are. They do appreciate the fact that I am making an extra effort on their behalf by attending conferences on my own time. There is very little doubt left in their minds that I am working hard to help them succeed.

++

"Edward B. Nuhfer" <enuhfer@carbon.cudenver.edu>

Subject: Re: Understanding group learning

Sender: pod@lists.acs.ohio-state.edu Tue, 25 Jul 1995 14:14:

Richard Felder and Huan Ngo are describing a very common experience of

professors who initiate cooperative learning for the first time. Their

experiences cause me to air a criticism of cooperative learning workshops

I have experienced in a number of presentations and short courses which

hard-sell the benefits of structured group learning

(cooperative/collaborative, etc.) without telling participants

what will actually occur if they return from such a seminar to "spring"

this onto their classes of students who have never experienced much other

than the lecture method. In my experience with engineering students

versus the other disciplines, I had more hard-core resistance to

group learning from my classes of engineering students. I wondered

why this was the case -- whether it resulted from the kind of student attracted to engineering or the core philosophy of the profession itself which exerts strong influence on academic units in engineering. However, Karl Smith, the third author on the Interaction Press book cited by Felder is an engineer who has dealt successfully with these problems. I have attended many cooperative learning sessions, and to his credit Karl is the ONLY presenter I've witnessed who honestly informed instructors that their evaluations could likely go down as they begin employing active learning methods for the first time. Knowing this, I did not get discouraged and give up when that very thing happened to me -- my evals went down lower than they had ever been, and the comments that students wrote were exactly like those described by Felder and Ngo. However, as I got less awkward with the non-lecture approach my evaluations went back up, and two semesters later they were higher than they had ever been in my classes of engineering students.

Here are some suggestions that might help minimize the problem the first semester.

(1) Don't come back from a POD, Lilly, etc. conference in the middle of your term and "spring" these "new" techniques onto your ongoing class. Instead, wait until a new class begins, explain clearly in your syllabus the nature of what you are going to do that may differ greatly from their conditioned expectations of being lectured to.

(2) Be prepared to explain briefly, but often, why you are adopting active

learning techiques and how you expect these to benefit your students.

(3) Be prepared to keep your finger continuously on the pulse of your class with frequent assessment techniques such as 1-minute or muddiest-point papers or through an ongoing continuous dialogue with a student management team. Never wait to find out what's happening in your class through just an end-of-course student evaluation (good practice in any class actually, but critical when you're shifting through new gears).

(4) Be prepared to teach the social skills to students that are required for successful team work in groups.

(5) Start slowly and with simple techniques; don't switch from a 100% lecture class to 100% active learning just because an "expert" says the latter is always superior. Start by making active learning just a part of your delivery, and master those simple techniques well before trying more complex approaches. Remember that (a) cooperative learning isn't ALWAYS superior and (b) even the most accomplished users of cooperative learning still utilize a certain amount of lecture; they don't use active learning just for the sake of doing it. Rather they know when it's more appropriate to lecture and when to use a structured group experience.

(6) Keep notes on rough spots that occur as they occur. Restructure your lessons and your syllabus for next class so that you don't have to re-live the uncomfortable experiences.

(7) If your evaluations do go down after your first experience, don't give up and say "Group learning doesn't work." It DOES work, but it takes time and practice to do it well. Those of us who are very accomplished at

lecturing are also prone to forgetting how bad our first attempts at lecturing actually were, and how much time and practice it took for us to do lecturing well.

(8) If your evaluations are going to be critical to your tenure or rank, it is advisable to let your chair and possibly dean know of your plans to make a switch in your teaching style PRIOR to doing it. Inform them that there is an anticipated risk to such change that may include a temporary lowering of student evaluations and that you are taking that risk.

(9) Purchase a good reference book such as Active Learing - Cooperation in the College CLassroom by Johnson, Johnson & Smith to use when you design your lessons and review students' comments about their experiences with these lessons.

(10) If you use a mid-term formative evaluation, be certain that it includes questions that apply to active learning formats. Although most offices of teaching effectiveness are encouraging employment of active learning techniques, some of these same offices are still trotting out the same old lecture based questions for formative evaluations. Formative evaluations now need to test for other things, particularly the presence of the "Five Basic Elements of Cooperative Learning" (see above book by the Johsons and Smith) in group learning experiences.

Sorry to be so long-winded, but Felder & Ngo have raised a particularly resonant chord and have made worthwhile contributions in the process.

Ed Nuhfer

enuhfer@carbon.cudenver.edu

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From: Marty Rosenzweig <mrosenzw@research1.bryant.edu>

Subject: Re: Why do so few teachers use group learning?

Sender: "Higher Education Processes Discussion (HEPROC)"

<HEPROC-L@american.edu>

I am a statistician by training, but teach in a math dept.

I am the only teacher among 10 fulltime and 4 parttime

faculty to use cooperative learning. Most instruction at

our school, a business college, is via lecture, although

some of the "capstone" courses use the case method.

My inspiration for change came at the "Problem Solving

Across the Curriculum" conference I attended 4 years ago

(and still attend each year). This is a small group of

academics interested in teaching methods who meet each

summer under the auspices of the SUNY system and others to

discuss issues of cooperative learning, and like matters.

(If anyone wants additional info on this year's conference,

please contact me directly).

I have evolved the following principles in my classes, with

help from the work of Johnson & Johnson, Karl Smith, Jim

Eison and others, including a colleague in the Mgt Dept.

* Students do not necessarily know how to work together, so

must be shown.

* Students pay attention to what is rewarded. If group activities are important then the reward structure (grading) must reflect this.

* Groups larger than 4 are hard to use, if you want them to meet outside of class - I require at least bi-weekly get togethers outside of class.

* Each member of the group must have a formal task - leader, secretary, etc.

* Training - the team leaders had a 1 - hour training each week throughout the semester outside of class on leadership, learning styles, problem solving, etc. The reward for the extra work was a grade bonus.

* Assessment - (1) content - daily quizzes, chapter exams, final. (2) Process - team leaders also acted as a "quality circle" and gave feedback on the class, what was ok, what needed improvement, what else needed to be done.

* Grades - students resent depending on others for their grade. So this should be minimized. Where possible team rewards are bonsuses. For example, I gave point increases to each team member if the average exam grade was above 80. Also if the team average improved from exam to exam.

* Teams - I organize teams heterogeneously on the basis of a first day quiz and on the basis of gender. Single gender

groups do not work as well in my classes. There also must

be a mechanism for removing non-performers from the team.

* Structure - I give a 10 to 20 minute lecturette, have

teams work on the day's material, mostly problems from the

text, and close with a 5-minute quiz.

Marty Rosenzweig <mrosenzw@research1.bryant.edu>

Dept of Math, Bryant College

Smithfield, RI 02917

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From: "Richard M. Felder" <felder@EOS.NCSU.EDU>

Subject: student resistance to group work

"Forum for Teaching & Learning in Higher Educ." <STLHE-L@unb.ca>

I've been enjoying the exchanges on this subject and thought I might

throw in my two cents worth by passing on one of my recent

columns from Chemical Engineering Education. The bottom line message is that if you use group work you can expect some degree of student resistance and hostility, but if you're careful about how you structure the work and patient with the students as they learn how to deal with it, the benefits are worth the struggles.

Richard Felder

felder@eos.ncsu.edu

WE NEVER SAID IT WOULD BE EASY

Richard M. Felder

Department of Chemical Engineering

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(Reprinted from Chemical Engineering Education 29(1), 32-33, 1995)

OK, here's the scenario. You go to a teaching workshop presented by

Woods or Wales or Stice or Smith or that joker from North Carolina who's always ranting about this stuff. The presenter instructs you to immerse your students in real-world problems without routinely providing all the requisite facts and formulas. He also tells you--repeatedly--to stop doing so much lecturing and instead get the students to work in teams and teach each other. Once they realize they can no longer count on you to tell them all they need to know, they'll start to rely on themselves to figure it out--which is to say, they will learn to learn.

Whether the instructional approach being promoted in the workshop is called guided design, problem-based learning, cooperative learning, 4MAT, or whatever, it's based on the reasonable premise that students learn more by doing things than by watching lectures. The presenter cites hundreds of studies showing that compared to traditional lecturing, active/cooperative

learning leads to deeper understanding, improved attitudes toward the subject, and greater self-confidence. It all sounds like just what you've been looking for to counter the apathy and poor performance that have characterized an uncomfortably high percentage of your students lately. You leave the workshop fired up and ready to switch to the new approach in your very next class.

You may be in for a rude shock. It's not that the methods don't work--they do. I've had great success with some of them,particularly

cooperative learning, and I do my fair share of missionary work on their behalf. The success is neither immediate nor automatic, however, and the awkwardness and frustration and student resistance and hostility you may experience before you get to the payoff can be formidable. It's tempting to give up in the face of all that, and many instructors unfortunately do.

The problem is that doing anything new and nontrivial always involves a learning curve, and the curve may be particularly steep for both you and your students when you try an active learning approach for the first time. The students, whose teachers have been telling them everything they needed to know from the first grade on, don't appreciate having this support suddenly withdrawn, and complaints like "Meachley never teaches us anything--we have

to do it all ourselves" start echoing through the corridors. It's even worse if you use cooperative (team-based) learning: students then gripe loudly and bitterly about other team members not pulling their weight or about being slowed down by having to explain everything to that lemon they've been forced to team with. Sometimes instructors who are effective lecturers get lower student ratings when they start using active and cooperative learning methods.

My goal here is to assure you that these initial glitches are both

common and natural, and that they may be a cause for concern but not for panic or discouragement. The trick is knowing how the process works, taking a few precautionary steps to smooth out the bumps, and waiting out the inevitable setbacks until the payoffs start emerging.

Consider the students. Woods(1) observes that students forced to take major responsibility for their own learning go through some or all of the steps psychologists associate with trauma and grief:

(1) SHOCK: "I don't believe it--we have to do homework in groups and she isn't going to lecture on the chapter before the problems are due?"

(2) DENIAL: "She can't be serious about this--if I ignore it, it will go

away."

(3) STRONG EMOTION: "I can't do it--I'd better drop the course and take it next semester" or "She can't do this to me--I'm going to

complain to the department head!"

(4) RESISTANCE AND WITHDRAWAL: "I'm not going to play her dumb games--I don't care if she fails me."

(5) SURRENDER AND ACCEPTANCE: "OK, I think it's stupid but I'm stuck with it and I might as well give it a shot."

(6) STRUGGLE AND EXPLORATION: "These other guys seem to be getting this stuff--maybe I need to try harder or do things differently to get it to work for me."

(7) RETURN OF CONFIDENCE: "Hey, this is starting to work. I think I can do it."

(8) INTEGRATION AND SUCCESS: YES! This stuff really works--I don't understand why I had so much trouble with it before.

Just as some people have an easier time than others in getting through the grieving process, some students may enthusiastically dive right into active learning and short-circuit many of the eight steps, while others may have difficulty getting past the negativity of Step 3. The point is to remember that the resistance you encounter from some students is a natural part of their journey from dependence to intellectual autonomy, and if you provide some help along the way, sooner or later most of them will make it.

So what can you do to help them and yourself get through the process? Out of painful necessity (and believe me, my observations about student resistance are neither

theoretical nor speculative) I've developed an arsenal of strategies. For whatever they may be worth, here they are.

SET THE STAGE. When I plan to use active or cooperative learning in a course, I explain on Day 1 exactly what I'm going to do and why. I assure the class, for example, that I'll be making them work in class not to make my life easier (quite the contrary), but because research shows that students learn by doing, not by just watching and listening. I reinforce the point by citing some of the research; as always, McKeachie (2) and Wankat and Oreovicz (3) provide good general summaries and Johnson, et al. (4) cite results specifically for cooperative learning.

PROVIDE COACHING ON THE SKILLS YOU WANT THE STUDENTS TO DEVELOP. When students complain (or make evident in other ways) that they don't know how to set up problem solutions or prepare for tests or work effectively in teams, I try to offer some guidance during my office hours and occasionally hold a miniclinic in class. Woods, Wankat and Oreovicz, and Johnson, et al., are rich sources of methods for facilitating development of learning and teamwork

skills.

GET FEEDBACK AND TRY TO BE RESPONSIVE TO IT. Especially when many students in a class seem to be spending a great deal of their time hovering around Stages 3 and 4 of the trauma scale (loss of confidence, anger, and withdrawal), I grit my teeth and conduct a midsemester evaluation, asking them to list things they like about the class, things they dislike, and things that would improve the class for them. The first list often surprises me: the complaints I've been hearing tend to monopolize my attention, clouding my awareness that what I'm doing is working well for many or most of the students. The things they dislike are not exactly fun to read, but I learn from them and the students seem to appreciate the opportunity to vent. The suggested improvements may include some that are unacceptable to me ("Stop assigning problems that you haven't lectured on." "Cut out this group garbage.") but I may be able to act on others without seriously disrupting my plans or compromising my principles. When I respond positively to some of their suggestions (like easing off on the length of the homework assignments, or giving them the option of doing a few assignments individually), it usually goes a long way toward getting them to meet me halfway.

BE PATIENT. I expect many of my students (especially those I haven't previously taught) to be frustrated and upset in the first few weeks of my courses. I deal with it now better than I used to, knowing from experience that most of them will turn around by the final exam.

GO BACK TO THE REFERENCES PERIODICALLY. When some of my cooperative learning groups seem to be disintegrating halfway through the semester, I look back at one of Karl Smith's monographs (or, for that matter, at my own workshop notes). I'm usually reminded that I've been neglecting one or another of the

recommended CL practices, like having the groups regularly assess their functioning

and work out what they need to do differently in the future.

DON'T EXPECT TO WIN THEM ALL. In the end, despite my best efforts, some students fail and some who pass continue to resent my putting so much of the burden of their learning on their shoulders. A student once wrote in a course-end evaluation, "Felder really makes us think!" It was on the list of things he disliked. On the other hand, for all their complaints about how hard I am on them, my students on the average earn higher grades than they ever did when I just lectured, and many more of them now tell me that after getting through one of my courses they feel confident that they can do

anything. So I lose some, but I win a lot more. I can cheerfully live with the tradeoff.

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To: in%"stlhe-l@unb.ca"

Subj: Re: MtA Teach: Collaborative Learning

Erin Steuter is concerned about cooperative learning leading to the teacher as

entertainer in the following post:

<<material clipped.. .I find the level of debate is very high and the students are happy; they like the group work, they are prepared for most of the exam questions etc.

>On the other hand I worry that fun' activities in the classroom promotes "the teacher as entertainer" attitude that the MTV generation of students are increasingly expecting. >

<>Thus, I worry that by too much emphasis on the 'fun' and active nature of group

learning, the other side of education; the concentrated, listening, thinking, reflecting side is being devalued and treated as old fashioned and boring. This would be a great loss.>>>

I think what Erin is reflecting on are the results of cooperative learning and the impact on students. The act of having fun is not the primary purpose of group learniing but it is inevitably the end result. When students are actively involved in their own learning they learn more than when they listen to a lecture, no matter how good the lecture, and they feel very good about what they have learned. When they also do better on exams because of their intense involvement with the material it builds their self esteem and this feels like having "fun". When students are working in groups they are doing more critical thinking than when listening to a lecture or lecture discussion. In the latter only one person is expounding at a time and who knows how many people are really listening. When using pairs one person is always verbalizing and one person is always listening. It becomes very obvious when one member of a

pair is not participating or when the pair is not working. There is no place to hide when working in groups.

As far as the teacher becoming the entertainer it seems to me to be quite the opposite in group work. The students are entertaining themselves through their involvement together. The teacher is mainly observing and interacting on an individual basis with pairs or groups or with single students. In fact I sometimes feel as though I am out of the loop once a collaborative activity is begun in class. I make an effort to move around the class and observe what is going on without being intrusive. I will confess that sometimes I walk around the class just to give the impression that I am teaching or being involved in the process when it is really the students who are taking control of their learning environment. The trick is to provide the mechanism for this to happen. That is where the best teachers come into the process.

Here comes my observation which may create some aggressive responses. When

you are lecturing you are indeed being an entertainer. Students expect you to be funny and informative, lively and creative and keep them on the edge of their seats with your information transfer. The lecturer becomes the center of attention. To do this for 50 minutes or more is very difficult. It is not possible for most people to absorb 50 minutes worth on concentrated information. This leads to overload and boredom in the class. When students use group learning they become excited, interested, involved and as Erin pointed out they do better on exams because they have learned the material not just regurgitated whet they heard in a lecture.

We need to break the old paradigms of the teacher as the knowledge giver and the student as the receiver of our wisdom. We need to have more confidence in our students as learners and ourselves as facilitators of a learning process. What will the students do in the future when they need to learn something and we are not there to lecture them?

Ted Panitz tpanitz@mecn.mass.edu

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Date: Sat, 11 Nov 1995 02:17:20 -0500

From: Dean Mancina <DMancina@AOL.COM>

Subject: Re: Collaborative Learning Groups in CC's

I put my students in collaborative learning groups for a portion of most class meetings. I teach a freshman student success course in a community college.

Things that have worked for me include (1) groups of no more than 5 students, (2) both randomizing and "fixing" the groups (so that there is at least one student getting an "A" in the class), (3) giving clear instructions as to the task the group is to accomplish, with a strict and short timeline, and (4) requiring that an oral report be made to everyone at the end, or a written summary to me, or a quiz question will be on the material they are working on, or give a reward, or several of the above, to keep them on track... these all seem to work with my students.

Sometimes I become frustrated when I can hear the students chatting "off task," but then I think about the numerous classes when I was a shy college student where I had no vehicle for making friends and never spoke a word to anyone in the class, and I rationalize that maybe there is some value to their chatting that just isn't the specific goal I had for the current assignment. I let it go on for a few minutes, then approach the group to encourage them to get back on task.

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Date: Sun, 12 Nov 1995 12:50:28 -0800

From: Lonna H Smith <lsmith@ISC.SJSU.EDU> lrnasst

Subject: Re: Collaborative Learning Groups in CC's

I'm not at a CC, but it doesn't matter, because cooperative learning groups work just as well at at 4 year university! Three reflections:

1) I never worry about chit-chat as long as the group is moving along with the task. Coincidentally, a colleague and I were discussing this the other day, and she mentioned reading that the chit-chat was a vital, important aspect of the group learning process because it was team-building. My feeling is: As long as the work's done, what's the worse thing that chit-chat can cause? The students may become friends?

2) My ideal groups contain 5 students- no more no less for most activities. For the past several years I have grouped students the following way: At the beginning of the semester, they are grouped relatively randomly until I get to know them. I observe their group behavior. Then I take the 5 most enthusiastic participants and put them in a group. These are the students who often dominate groups. They have a grand time outshouting each other! Then I take the 5 shyest students, the ones who never say a word, who need extra wait time, who are intimidated by the others, and the ones who are willing to let the others carry the brunt of the work. They are in a group together. It's quiet,

but the work gets done because, like all groups, they must share with the whole class. The other groups are made up of students who are in the middle. They would speak if the boisterous bunch let them get a word in edgewise. Conversation flows nicely with these middle groups.

3) Although my students work in groups almost every class period, there are times when they don't. One of these times occurred when I was being observed and evaluated. My evaluator criticized me for not working in groups, even though the lesson would have been compromised if I had! I guess there's a lesson for me in this... although I'm not sure what!

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